

REMARKS

In the Office Action, the Examiner objects to claims 1, 3, 4, 6, 7, 9-11, 13, 14, 18, 19, 24, 25, 30, 31, and 34 due to minor informalities; rejects claims 32 and 33 as being directed toward non-statutory subject matter; rejects claim 25 under 35 U.S.C. § 102(b) as anticipated by UNGER et al. (U.S. Patent No. 6,230,326); rejects claims 1-3 under 35 U.S.C. § 102(e) as anticipated by PARK (U.S. Patent Application Publication No. 2002/0062486); rejects claim 15 under 35 U.S.C. § 102(e) as anticipated by BERNATH et al. (U.S. Patent Application Publication No. 2001/0038647); rejects claims 32 and 33 under 35 U.S.C. § 102(e) as anticipated by GUMMALLA et al. (U.S. Patent No. 6,614,799); rejects claim 34 under 35 U.S.C. § 102(e) as anticipated by ZANG et al. (U.S. Patent No. 7,068,712); rejects claims 8-10 under 35 U.S.C. § 103(a) as unpatentable over PARK in view of ZANG et al.; rejects claims 4 and 11 under 35 U.S.C. § 103(a) as unpatentable over PARK in view of ZANG et al. and ENG (U.S. Patent Application Publication No. 2003/0035442); rejects claims 5 and 12 under 35 U.S.C. § 103(a) as unpatentable over PARK in view of ZANG et al. and FIJOLEK et al. (U.S. Patent No. 7,107,326); rejects claims 6, 7, 13, and 14 under 35 U.S.C. § 103(a) as unpatentable over PARK in view of ZANG et al. and LEANO et al. (U.S. Patent No. 6,453,472); rejects claims 16-19 under 35 U.S.C. § 103(a) as unpatentable over BERNATH et al. in view of PARK; rejects claims 20-24 under 35 U.S.C. § 103(a) as unpatentable over PARK in view of ZANG et al. and BERNATH et al.; rejects claims 26-28 under 35 U.S.C. § 103(a) as unpatentable over UNGER et al. in view of PARK;

and rejects claims 29-31 under 35 U.S.C. § 103(a) as unpatentable over UNGER et al. in view of PARK and LEANO et al. Applicant traverses these objections and rejections.¹

By way of the present amendment, Applicant cancels claims 2, 32, and 33 without prejudice or disclaimer and amends claims 1, 3, 4, 6, 7, 9-11, 13, 14, 18, 19, 24, 25, 30, 31, and 34 to improve form. No new matter has been added by way of the present amendment. Claims 1, 3-31 and 34 remain pending.

The Examiner objects to claims 1, 3, 4, 6, 7, 9-11, 13, 14, 18, 19, 24, 25, 30, 31, and 34 due to minor informalities. Without acquiescing in the Examiner's objection, but merely to expedite prosecution, Applicant amends claims 1, 3, 4, 6, 7, 9-11, 13, 14, 18, 19, 24, 25, 30, 31, and 34 in the manner suggested by the Examiner. As such, withdrawal of the objection to claims 1, 3, 4, 6, 7, 9-11, 13, 14, 18, 19, 24, 25, 30, 31, and 34 is respectfully requested.

Claim 25 stands rejected under 35 U.S.C. § 102(b) as allegedly anticipated by UNGER et al. Applicant respectfully traverses this rejection.

Independent claim 25 recites a method of initializing cable modems subsequent to a cable modem termination system re-boot. The method includes receiving initial upstream channel requests from a plurality of modems; retrieving first data from each of the requests; and determining an order in which to assign upstream channels to each of the plurality of modems based on the retrieved first data. UNGER et al. does not disclose or suggest this combination of features.

¹ As Applicant's remarks with respect to the Examiner's rejections are sufficient to overcome these rejections, Applicant's silence as to assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, motivation to combine reference, assertions as to dependent claims, etc.) is not a concession by Applicant that such assertions are accurate or such requirements have been met, and Applicant reserves the right to analyze and dispute such assertions/requirements in the future.

For example, UNGER et al. does not disclose or suggest determining an order in which to assign upstream channels to each of a plurality of modems based on retrieved first data. The Examiner relies on column 1, lines 32-53 of UNGER et al. as allegedly disclosing this feature (Office Action, pg. 5). Applicant respectfully disagrees with the Examiner's interpretation of UNGER et al.

At column 1, lines 32-53, UNGER et al. discloses:

As is discussed in the MCNS specification, the CMTS 531 periodically broadcasts upstream channel descriptors (UCDs) on the downstream channel 501 in order to describe characteristics of upstream channels to the CMs. As part of the initialization process, a CM waits for a UCD in order to obtain transmission parameters for the upstream channel. When the CM receives a UCD and determines that the transmission parameters are suitable, it waits for a SYNC message from the CMTS in order to achieve time synchronization with the CMTS. It then waits for a bandwidth allocation map for the selected channel. The allocation map allocates periods in the bandwidth to various types of data transmissions. One of these may be an "initial maintenance" request. It is during this initial maintenance request time slot that a new CM may transmit what is termed a "ranging request" which is used to determine network delay. In response to the ranging request, the CMTS transmits a "ranging response" which, may among other parameters, include a parameter redirecting the CM to an appropriate upstream channel. As is discussed in Appendix G to the MCNS specification, this topology imposes a number of constraints including:

This section of UNGER et al. discloses that the cable modem termination system (CMTS) periodically broadcasts upstream channel descriptors (UCDs) on the downstream channel 501 in order to describe characteristics of upstream channels to the CMs. This section of UNGER et al. discloses that a new cable modem may transmit a ranging request, which is used to determine network delay. This section of UNGER et al. does not disclose or suggest determining an order in which to assign upstream channels to each of a plurality of modems based on retrieved first data, as required by claim 25.

For at least the foregoing reason, Applicant submits that claim 25 is not anticipated by UNGER et al.

Pending claims 1 and 3 stand rejected under 35 U.S.C. § 102(e) as allegedly anticipated by PARK. Applicant traverses this rejection.

Amended independent claim 1 recites a method of allocating upstream resources to a plurality of cable modems. The method includes grouping the plurality of cable modems into a plurality of groups based on quality of service requirements of each of the cable modems; ordering allocation of upstream resources to each of the plurality of cable modems based on the group to which each of the cable modems belongs; and allocating upstream resources to each of the cable modems based on the ordering. PARK does not disclose or suggest this combination of features.

For example, PARK does not disclose or suggest grouping a plurality of cable modems into a plurality of groups based on quality of service requirements of each of the cable modems. This feature was previously recited in claim 2. The Examiner relies on paragraph 0027 of PARK as allegedly disclosing this feature (Office Action, pg. 6).

Applicant disagrees with the Examiner's interpretation of PARK.

At column 0027, PARK discloses:

First, the cable modems 230 are grouped by several units (230-1, 230-2, . . . , 230-n), proper group information of the groups (230-1, 230-2, . . . , 230-n) are set and allocated. Herein, the cable modems 230 are grouped by a certain units according to a distance from the CMTS 220 or regional characteristics or various standards.

This section of PARK discloses that cable modems are grouped by certain units according to a distance from the CMTS 220 or regional characteristics or various standards. This section of PARK does not disclose or suggest grouping a plurality of cable modems into a plurality of groups based on quality of service requirements of each of the cable modems, as required by amended claim 1.

For at least the foregoing reason, Applicant submits that claim 1 is not anticipated by PARK.

Claim 3 depends from claim 1. Therefore, claim 3 is not anticipated by PARK for at least the reasons given above with respect to claim 1.

Claim 15 is rejected under 35 U.S.C. § 102(e) as allegedly anticipated by BERNATH et al. Applicant respectfully traverses this rejection.

Independent claim 15 recites a method of allocating upstream resources in a cable modem system. The method includes receiving upstream resource requests from a plurality of cable modems, each of the resource requests comprising an address associated with a cable modem of the plurality of cable modems; determining an order that the upstream resources are to be assigned to each of the plurality of cable modems based on the address of each of the resource requests; and allocating the upstream resources based on the determined order. BERNATH et al. does not disclose or suggest this combination of features.

For example, BERNATH et al. does not disclose or suggest determining an order that the upstream resources are to be assigned to each of a plurality of cable modems based on an address of each of the resource requests. The Examiner relies on paragraphs 0015 and 0016 of BERNATH et al. as allegedly disclosing these features (Office Action, pg. 7). Applicant disagrees.

At paragraphs 0015 and 0016, BERNATH et al. discloses:

The time slots for the downstream messages are determined by the head end network controller. The reception of data by users is determined by an addressing scheme. The head end transmits a unique address for each cable modem along with the data for that user; the individual modem is configured to accept only the data intended for it.

Allocating time slots for upstream messages generated by users is complicated by the fact that the upstream messages are initiated by independent units. In general, two types of schemes have been developed to control transmissions by the users: arbitration methods and allocation by the controller.

This section of BERNATH et al. discloses that the reception of data by users is determined by an addressing scheme, that is, each individual modem is configured to accept only the data intended for it. This section of BERNATH et al. also discloses that two types of schemes have been developed to control transmissions by the users: arbitration methods and allocation by the controller. This section of BERNATH et al. discloses transmitting a unique address so that each modem accepts only data intended for it, not to determine an order based on the addresses. Therefore, this section of BERNATH et al. does not disclose or suggest determining an order that the upstream resources are to be assigned to each of a plurality of cable modems based on an address of each of the resource requests, as required by claim 15.

For at least the foregoing reason, Applicant submits that claim 15 is not anticipated by BERNATH et al.

Claim 34 stands rejected under 35 U.S.C. § 102(e) as allegedly anticipated by ZANG et al. Applicant traverses this rejection.

Independent claim 34 recites a system for allocating upstream resources to a plurality of cable modems subsequent to a cable modem termination system (CMTS) re-boot. The system includes means for grouping the plurality of cable modems into a plurality of groups; and means of identifying an order, subsequent to the CMTS re-boot, that upstream resources are to be allocated to each of the plurality of cable modems based on the group to which each of the cable modems belongs. ZANG et al. does not disclose or suggest this combination of features.

For example, ZANG et al. does not disclose or suggest means of identifying an order, subsequent to a CMTS re-boot, that upstream resources are to be allocated to each of a plurality of cable modems based on a group to which each of the cable modems belongs. The Examiner relies on column 17, lines 1-10 of ZANG et al. as allegedly disclosing this feature (Office Action, pg. 8). Applicant disagrees.

At column 17, lines 1-10, ZANG et al. discloses:

...working CMTS reboots or otherwise comes online. Initially, it enters the init state at 605. It remains in this state until one of three events transpire.

First, it may receive a HELLO message, which does not identify it as the owner of the traffic channel. See 607. In this case, there is a protection CMTS present but it is not forwarding traffic on behalf of the working CMTS. To service its cable modems, the working CMTS should immediately enter the teach state as indicated at 609. It turns on its RF link at this point.

This section of ZANG et al. discloses that, when a CMTS reboots or otherwise comes online, it enters the initialization state and remains in this state until one of three events transpires. This section of ZANG et al. does not disclose or suggest allocating upstream resources. Therefore, this section of ZANG et al. does not disclose or remotely suggest means of identifying an order, subsequent to a CMTS re-boot, that upstream resources are to be allocated to each of a plurality of cable modems based on a group to which each of the cable modems belongs, as required by claim 34.

For at least the foregoing reason, Applicant submits that claim 34 is not anticipated by ZANG et al.

Claims 8-10 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over PARK in view of ZANG et al. Applicant traverses this rejection.

Independent claim 8 recites a cable modem termination system (CMTS). The CMTS includes a memory configured to store instructions; and a processing unit

configured to execute the instructions in the memory to: group a plurality of cable modems (CMs) into a plurality of groups, re-boot the CMTS, and determine an order for allocating upstream resources to each of the plurality of CMs based on the group to which each of the CMs belongs. PARK and ZANG et al., whether taken alone or in reasonable combination, do not disclose or suggest this combination of features.

For example, PARK and ZANG et al. do not disclose or suggest a processing unit configured to execute the instructions in the memory to determine an order for allocating upstream resources to each of the plurality of CMs based on the group to which each of a plurality of CMs belongs. The Examiner relies on the abstract of PARK as allegedly disclosing this feature (Office Action, pg. 9). Applicant respectfully disagrees.

In the abstract, PARK discloses:

In a cable modem network system and a method for selecting an upstream channel in a cable modem, a time required for an initialization of a cable modem can be reduced by grouping cable modems by a certain units and selecting an upstream channel on the basis of upstream channel group information and preset upstream channel information. A cable modem network system includes a CMTS (cable modem termination system) grouping cable modems by a certain units and transmitting UCDs (upstream channel descriptors) information including upstream channel group information according to the grouping and a cable modem selecting an upstream channel on the basis of the upstream channel group information included in the UCDs information and preset upstream channel information.

This section of PARK discloses grouping cable modems by certain units and selecting an upstream channel on the basis of upstream channel group information. This section of PARK does not disclose determining an order for allocating upstream resources to the CMs based on the grouping. Therefore, PARK does not disclose or even suggest a processing unit configured to execute the instructions in the memory to determine an

order for allocating upstream resources to each of the plurality of CMs based on the group to which each of a plurality of CMs belongs, as required by claim 8.

The disclosure of ZANG et al. does not remedy the deficiencies in the disclosure of PARK as set forth above.

For at least the foregoing reasons, Applicant submits that claim 8 is patentable over PARK and ZANG et al., whether taken alone or in any reasonable combination.

Claims 9 and 10 depend from claim 8. Therefore, claims 9 and 10 are patentable over PARK and ZANG et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 8.

Claims 4 and 11 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over PARK in view of ZANG et al. and ENG. Applicant traverses this rejection.

Claim 4 depends from claim 1. Without acquiescing in the rejection of claim 4, Applicant respectfully submits the disclosures of ZANG et al. and ENG do not remedy the deficiencies in the disclosure of PARK as set forth above with respect to claim 1. Therefore, claim 4 is patentable over PARK, ZANG et al. and ENG, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1.

Claim 11 depends from claim 8. Without acquiescing in the rejection of claim 11, Applicant respectfully submits the disclosure of ENG does not remedy the deficiencies in the disclosures of PARK and ZANG et al. set forth above with respect to claim 8. Therefore, claim 11 is patentable over PARK, ZANG et al. and ENG, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 8.

Claims 5 and 12 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over PARK in view of ZANG et al. and FIJOLEK. Applicant traverses this rejection.

Claim 5 depends from claim 1. Without acquiescing in the rejection of claim 5, Applicant respectfully submits the disclosures of ZANG et al. and FIJOLEK do not remedy the deficiencies in the disclosure of PARK as set forth above with respect to claim 1. Therefore, claim 5 is patentable over PARK, ZANG et al. and FIJOLEK, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1.

Claim 12 depends from claim 8. Without acquiescing in the rejection of claim 12, Applicant respectfully submits the disclosure of FIJOLEK does not remedy the deficiencies in the disclosures of PARK and ZANG et al. set forth above with respect to claim 8. Therefore, claim 12 is patentable over PARK, ZANG et al. and FIJOLEK, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 8.

Claims 6, 7, 13, and 14 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over PARK in view of ZANG et al. and LEANO et al. Applicant traverses this rejection.

Claim 6 depends from claim 1. Without acquiescing in the rejection of claim 6, Applicant respectfully submits the disclosures of ZANG et al. and LEANO et al. do not remedy the deficiencies in the disclosure of PARK as set forth above with respect to claim 1. Therefore, claim 6 is patentable over PARK, ZANG et al. and LEANO et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1.

Claim 13 depends from claim 8. Without acquiescing in the rejection of claim 13, Applicant respectfully submits the disclosure of LEANO et al. does not remedy the deficiencies in the disclosures of PARK and ZANG et al. set forth above with respect to claim 8. Therefore, claim 13 is patentable over PARK, ZANG et al. and LEANO et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 8.

Claim 7 depends from claim 6 and claim 14 depends from claim 13. Therefore, claims 7 and 14 are patentable over PARK, ZANG et al. and LEANO et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claims 6 and 13.

Claims 16-19 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over BERNATH et al. in view of PARK. Applicant traverses this rejection.

Claims 16 and 17 depend from claim 15. Without acquiescing in the rejection of claims 16 and 17, Applicant respectfully submits the disclosure of PARK does not remedy the deficiencies in the disclosure of BERNATH et al. set forth above with regard to claim 15. Therefore, claims 16 and 17 are patentable over BERNATH et al. and PARK, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 15.

Claims 18 and 19 depend from claim 17. Therefore, claims 18 and 19 are patentable over BERNATH et al. and PARK, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 17.

Claims 20-24 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over PARK in view of ZANG et al. and BERNATH et al. Applicant traverses this rejection.

Claim 20 recites features similar to, yet possibly of different scope than, features described above with regard to claim 8. The disclosure of BERNATH et al. does not remedy the deficiencies in the disclosures of PARK and ZANG et al. as described above with respect to claim 8. Therefore, claim 20 is patentable over PARK, ZANG et al., and BERNATH et al., whether taken alone or in any reasonable combination, for at least reasons similar to the reasons given above with respect to claim 8.

Claims 21-24 depend from claim 20. Therefore, claims 21-24 are patentable over PARK, ZANG et al., and BERNATH et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 20.

Claims 26-28 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over UNGER et al. in view of PARK. Applicant traverses this rejection.

Claims 26 and 27 depend from claim 25. Without acquiescing in the rejection of claims 26 and 27, Applicant respectfully submits the disclosure of PARK does not remedy the deficiencies in the disclosure of UNGER et al. set forth above with regard to claim 25. Therefore, claims 26 and 27 are patentable over UNGER et al. and PARK, whether taken alone or in any reasonable combination, for at least the reasons given above with regard to claim 25.

Claim 28 depends from claim 27. Therefore, claim 28 is patentable over UNGER et al. and PARK, whether taken alone or in any reasonable combination, for at least the reasons given above with regard to claim 27.

Claims 29-31 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over UNGER et al. in view of PARK and LEANO et al. Applicant traverses this rejection.

Claims 29 and 30 depend from claim 27. Without acquiescing in the rejection of claims 29 and 30, Applicant respectfully submits the disclosure of LEANO et al. does not remedy the deficiencies in the disclosure of UNGER et al. and PARK set forth above with respect to claim 27. Therefore, claims 29 and 30 are patentable over UNGER et al., PARK, and LEANO et al., whether taken alone or in any reasonable combination, for at least the reasons given above with regard to claim 27.

Claim 31 depends from claim 30. Therefore, claim 31 is patentable over UNGER et al., PARK, and LEANO et al., whether taken alone or in any reasonable combination, for at least the reasons given above with regard to claim 30.

In view of the foregoing amendments and remarks, Applicant respectfully requests the Examiner's reconsideration of this application, and the timely allowance of the pending claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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